

Curriculum Guide for Electrician Trainee

Curriculum Guide for Electrician Trainee as mandated by AB1087, Legislative Action

Introduction:

On May 29, 2002, the Governor approved AB 1087, an act to amend Section 3099 of and to add Sections 3099.2, 3099.3 and 3099.4 to the Labor Code relating to electricians. This Bill charged the Department of Apprenticeship Standards (DAS) with the following:

- ❖ Establish and validate minimum standards for competency and training of electricians in the State of California.
- ❖ Establish an advisory committee and panels to carry out the functions of this bill.
- ❖ Establish an electrical certification curriculum committee (ECCC) to develop written educational curriculum standards
- ❖ Establish and adopt regulations to enforce this bill.
- ❖ Issue certification cards to electricians who have been certified.

Accordingly, the California Labor Code 3099.4 states, “an uncertified person may perform electrical work for which certification is required under Section 3099 in order to acquire the necessary on-the-job experience for certificate, if all of the following requirements are met:

- ❖ Register with DAS
- ❖ Completed or enrolled in an approved curriculum of classroom instruction
- ❖ Employer attests that the person works under the DIRECT supervision of a certified electrician.

It is the area of enrollment in an approved curriculum of classroom instruction that this proposal will address. Many unanswered questions remain on the proper approach a person should take in registering for classes. Since this curriculum may or may not be part of a vocational school or community college standard program, it is the intent of this proposal to outline a course study guideline for a person registering as an electrical trainee.

Proposal for Electrician Trainee Related Classroom Instruction (RCI):

Curriculum Guide for Electrician Trainee

If a person wants to perform electrical work for a C-10 contractor and does not yet qualify to take the certification exam due to lack of work experience, related instruction, or newly located to the state of California, they can do so by registering as an electrician trainee.

An electrician trainee must be enrolled in a state approved school and under the supervision of a certified electrician that is supervising only ONE electrician trainee. Since a person enrolling in a state approved school many not have the benefit of a guidance counselor, the attached curriculum schedule, based on a semester schedule, will help a person navigate towards certification.

The primary steps in becoming an electrician trainee are submitting a registration application to the Department of Apprenticeship Standards (DAS), along with proof of enrollment in an approved school. This process does not apply to any person registered with a state approved apprenticeship program. Below is a step-by-step approach for the electrician trainee to follow in obtaining the required 750 hours of related classroom instructions.

❖ REGISTER:

- Download a copy of the state of California's Application for New Registration of Electrician Trainee from the DAS website: www.dir.ca.gov/DAS/ElectricalTrainee.htm, or contact DAS-Electrical Certification Unit, P. O. Box 420603, San Francisco, California 94142-0603, (415) 703-4920, to request an application form be mailed to you.
- Fill out the application and attach a check/money order in the amount of \$25.00. Mail the application to DAS-Electrician Certification Unit, P. O. Box 420603, San Francisco, California 94142-0603.

❖ CHOOSE AN APPROVED SCHOOL IN YOUR GEOGRAPHICAL AREA:

- Go to www.dir.ca.gov/DAS/listofapprovedschools.html, to find an approved college within your geographic area.

❖ SAMPLE CURRICULUM GUIDE FOR REQUIRED 750 HOURS OF RCI:

- Based on the requirements of AB1087, and the requirements of the Electrician Certification Curriculum Committee (ECCC), below are classes listed which are commonly available from an approved educational provider within the Community College district. Each class represents one (1) semester within an academic calendar.
 - Introduction to Electronics: Reading simple schematic diagrams and construction elementary electrical/electronic circuits; using DC power supplies and AC power sources.

Curriculum Guide for Electrician Trainee

- **DC Electronics:** Study of direct current and its effect on resistors, inductors, and capacitors. The nature of electricity, resistance, basic circuit laws, Ohm's Law, magnetism, inductance, capacitance and the uses of power supplies, Multimeters, and oscilloscopes.
- **AC Electronics:** Study of alternating current and its effect on resistors, inductors, and capacitors. The nature of AC, AC and resistance, inductive and capacitive reactance, transformers, resonance, and the use of power supplies, Multimeters, and oscilloscopes.
- **Basic Applied Electronic Math:** Basic applications of algebra to the solution of problems involving direct-current circuits. Elements of trigonometry, logarithm, complex numbers, and vector methods as applied to alternating current circuits and high-transmissions lines.
- **Non-linear circuit analysis:** Analysis and computer-based simulation of discrete and monolithic applications of fixed and variable regulated power supplies, sine wave and non-sine wave RC oscillators, phase-locked loop circuits, and RF amplifiers/oscillators.
- **Introduction to Programmable Logic Controllers:** Review of the component parts of a programmable logic controller and their function and their interrelationship. Examines PLC input/output systems and requirements. Covers ladder logic programming using basic I/O instructions, logic instructions, timers, counters, comparison and math functions in depth.
- **Fundamentals of Electric Motor Control:** Theory, construction, and operation of fractional-and multi-horse power DC and AC electric motors.
- **Building Inspection/Electrical:** Overview of the National Electrical Code (NEC) covers the various aspects of electrical service as applied to building inspection, single-family dwellings and two-family dwellings.
- **Blueprint Reading:** Reading and understanding, and interpreting architectural plans for residential and commercial construction. (This course may be taken for 2 semesters)